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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,255	03/23/2006	Jifeng Li	L9289.06128	2983

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EXAMINER

RIZK, SAMIR WADIE

ART UNIT	PAPER NUMBER
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2112

MAIL DATE	DELIVERY MODE
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09/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,255	Applicant(s) LI, JIFENG	
	Examiner Sam Rizk	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/23/2006, 11/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTIONS

- Claims 1-5 have been submitted for examination
- Claims 1-5 have been rejected

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claim 5 is rejected under 35 U.S.C. 101 because the claim invention is directed to non-statutory subject matter.

For Example, each limitation in the method claim 1 is pure a mental step or act, i.e. reducing the number of bits of a systematic and parity bits is a mental step that has no utility (application). To qualify under section 101 statutory process, the claim should positively recite the other statutory class (**the thing or product**) to which is tied. See MPEP section 2106.IV.B.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Osthoff et al. US patent no. 6126310 (Hereinafter Osthoff).
3. In regard to claim 1, Osthoff teaches:
 - An input control apparatus comprising:
 - a bit number reduction section that reduces the number of bits of a systematic part and the number of bits of parity parts having a plurality of sequences input to a turbo decoder; and
(col. 6, lines (24-34) (information/systematic bits) and lines (34-40) (parity bits) in Osthoff)
 - a control section that controls said bit number reduction section so that the number of bits of one sequence of the parity parts falls below the number of bits of the systematic part.
(col. 6, lines (41-51) and Fig. 1a, ref "PRM" in Osthoff)
4. Claim 5 is rejected for the same reasons as per claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Osthoff as applied to claim 1 above, and further in view of Tong et al. US patent no. 7072307 (Hereinafter Tong).
6. In regard to claim 2, Osthoff teaches substantially all the limitations in claim 1. However, Osthoff does not teach:
- The input control apparatus according to claim 1, wherein said control section controls said bit number reduction section so that the number of bits of the parity parts is obtained in accordance with a coding rate and/or coding block length of a bit sequence input to the turbo decoder.

Tong in an analogous art that teaches hybrid ARQ schemes with soft combining in variable rate packet data teaches:

- The input control apparatus according to claim 1, wherein said control section controls said bit number reduction section so that the number of bits of the parity parts is obtained in accordance with a coding rate and/or coding block length of a bit sequence input to the turbo decoder.

(figures 2 & 4 in Tong)

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tong that comprise a coding rate and/or coding block length of a bit sequence input to the turbo decoder with the teaching of Osthoff.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized the need for improved FEC and high throughput.

7. In regard to claim 3, Tong teaches;

- The input control apparatus according to claim 2, wherein said control section performs control so that the number of bits of the parity parts decreases as the coding rate of the bit sequence input to the turbo decoder decreases and the number of bits of the parity parts increases as the coding rate increases.

(figure 2 in Tong, notice the relationship between the coding rates and the parity bits in the table)

8. In regard to claim 4, Tong teaches

- The input control apparatus according to claim 2, wherein said control section performs control so that the number of bits of the parity parts decreases as the coding block length input to the turbo decoder increases and the number of bits of the parity parts increases as the coding block length decreases.

(figure 2 in Tong, notice the relationship between the coding block length (R) the parity bits in the table)

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- Hedberg US publication 2006/0218459 teaches Coding system for variable FEC code block sizes.
 - Moon et al. US patent no. 7143336 teaches decoding parallel concatenated parity check code.
 - Mitazaki et al. US publication no. 2005/0235190 teaches Hybrid ARQ communication system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Rizk whose telephone number is (571) 272-8191. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronics Business Center (EBC) at 866-217-9197 (toll-free)

/Sam Rizk/

Examiner, Art Unit 2112

/JACQUES H LOUIS-JACQUES/

Supervisory Patent Examiner, Art Unit 2100